

# HCI - Assignment n.2

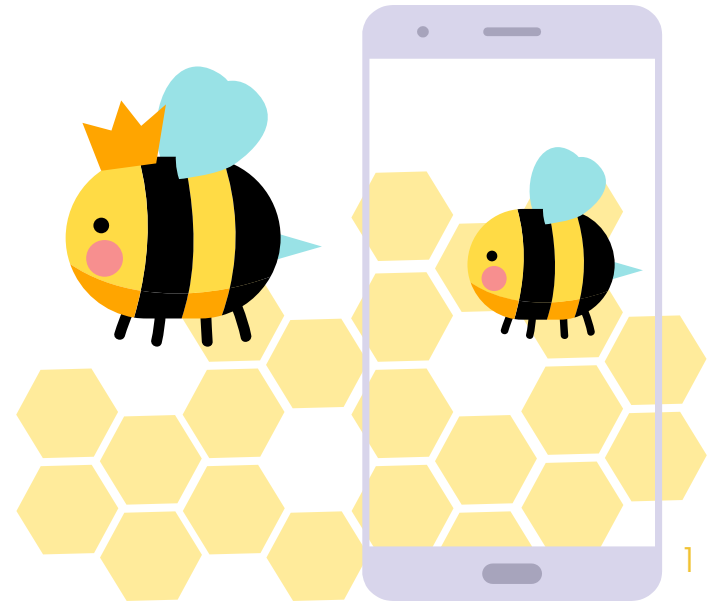
**Design and prototyping of an application using a human-centered approach**

**Final presentation and Demo**

**Project Title:** Bee in Control

**Group:** G2, Lúcia Sousa 93086, Raquel Pinto 92948,  
Rodrigo Martins 93264

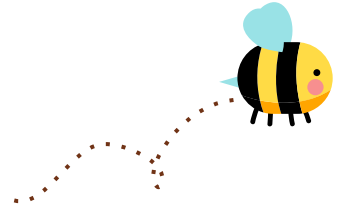
**Lab Class:** P4



# Introduction

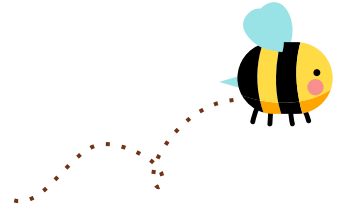
## Bee in Control

- Application to help beekeepers keep track of their beehives;
- We know what difficulties beekeepers have and we wanted to help;
- Related to Databases project.



# Project Objectives

## Bee in Control



- Provide an easy to use, yet complete application that can help you keep track of the state of your apiaries;
- Keep information of beehives;
- Track the evolution and the needs of beehives;
- Keep a list of specific tasks the user needs to do.

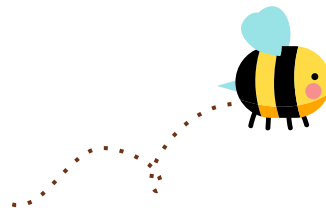
### Benefits:

- Portable because it can be accessed through your phone or tablet;
- No need to keep a paper records of all things;
- Practical because the user can take the application while doing the job.



# Personas

## Bee in Control



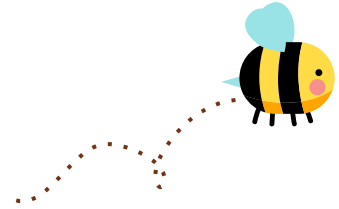
Name	Manuel Ribeiro
Gender	Male
Demographics	44 years old Has a Master's degree in History Education
Profession	High School History Teacher
Tasks	Preparing lessons Grading students' tests
Background	Practices beekeeping in his spare time



Name	Rosalinda Neto
Gender	Female
Demographics	58 years old Studied until 6th grade
Profession	Beekeeper
Tasks	Collecting honey Record the last honey harvest Keep track of treatments
Background	Likes to garden whenever she can

# Scenarios

## Bee in Control

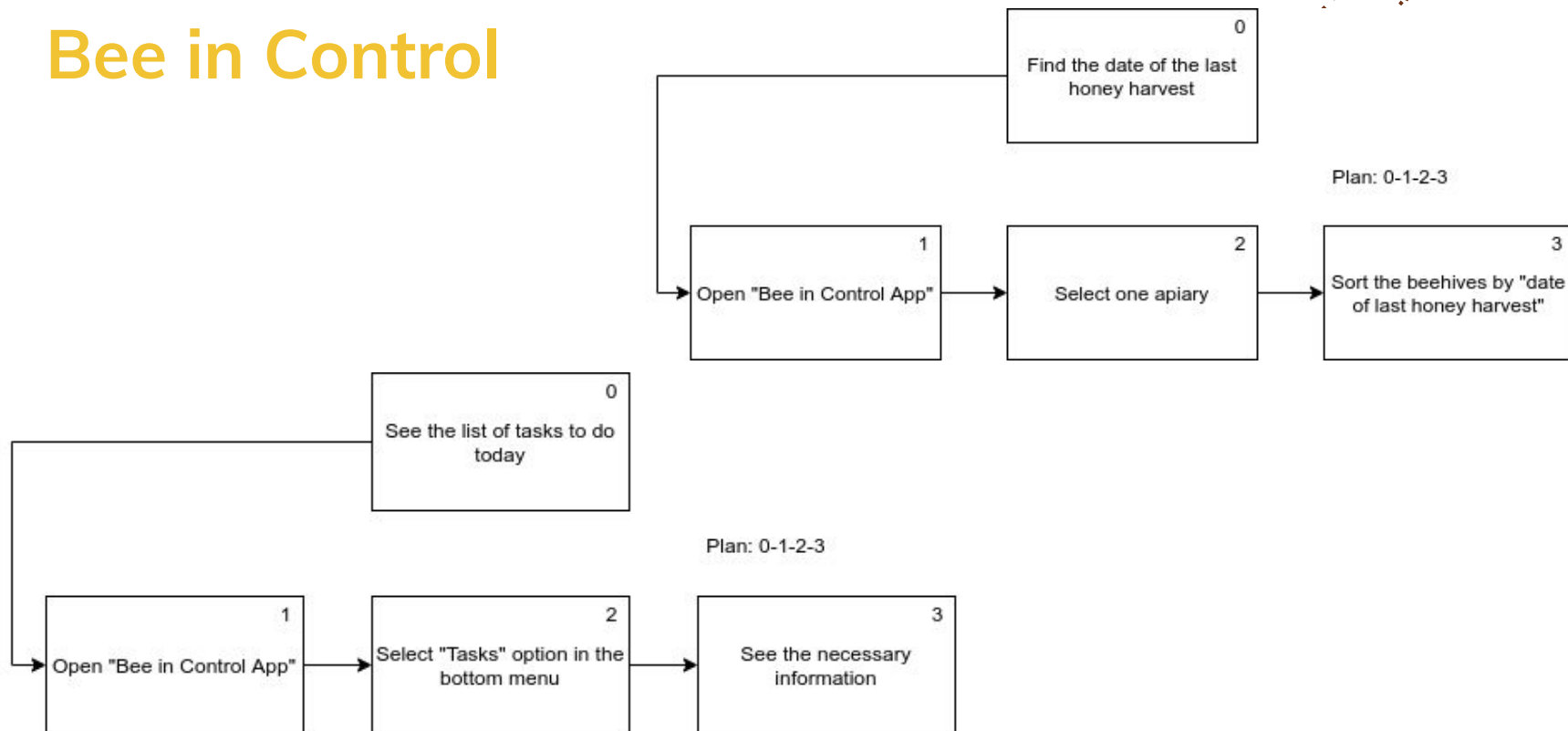
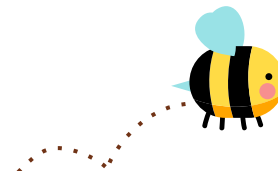


- Manuel comes home tired from work and it happens that he forgets what he has to do in his apiary and needs to write down all the tasks he has to do for certain beehives.
- Rosalinda can't find the date of the last honey harvest. She needs to have all the necessary information intact and in one place, where she can look up what she wants quickly and easily.



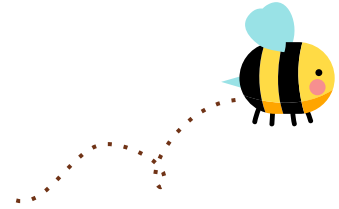
# Tasks

## Bee in Control



# Requirements

## Bee in Control



### Non-functional requirements

- Simple, intuitive and easy to learn application;
- Complete application.

### Functional Requirements

- Save, display and modify information;
- Add beehives, tasks, treatments;
- Register the last harvest;
- The food given to the bees.

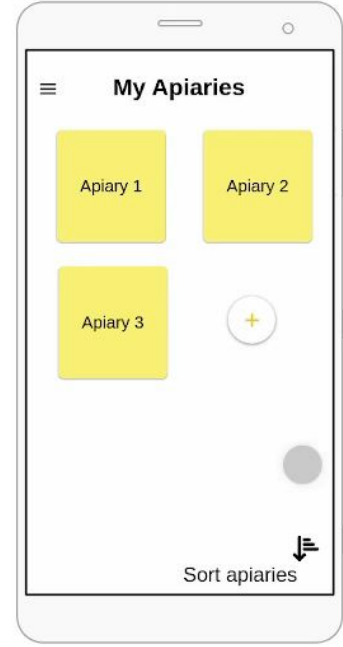
# Low Fidelity Prototype

## Bee in Control

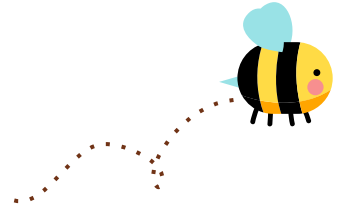
- Digital Prototype, proto.io
- Simple and intuitive



Sign in



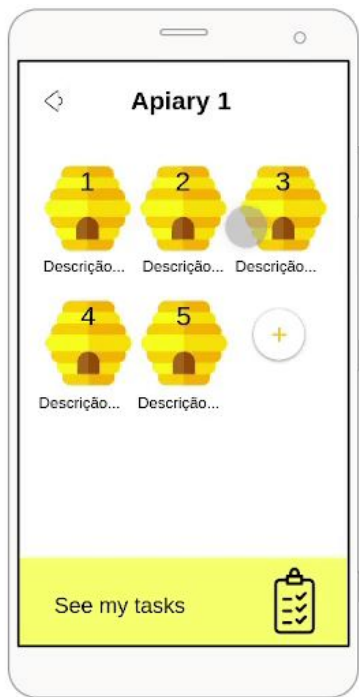
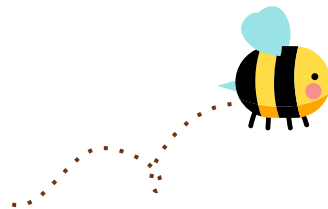
Sort apiaries by  
number of beehives



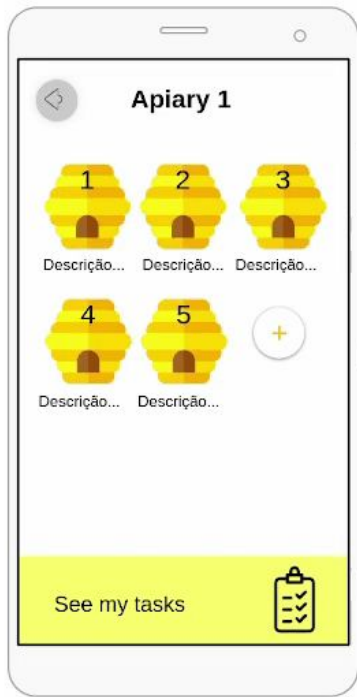


# Low Fidelity Prototype

## Bee in Control



Add beehive



See information  
about beehive

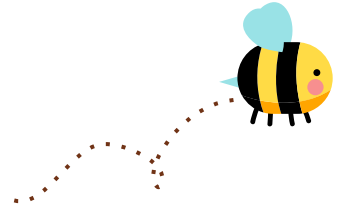


See tasks



See reports

# LFP User Evaluation



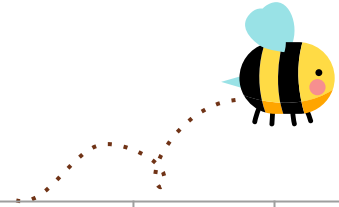
## Bee in Control

- 1- Create an account.
- 2- View the task list of apiary 1.
- 3- Check the date of the last harvest of beehive 1, from apiary 1.
- 4- Add a new beehive.
- 5- Add a new apiary.
- 6- Find the help/documentation.
- 7- Add a task in apiary 1.
- 8- Find the beehive in apiary 3 where the most recent harvest was done.
- 9- Find the apiaries with more beehives, select the first apiary, find the beehive with less hive body and find that number.

# LFP User Evaluation

## Bee in Control

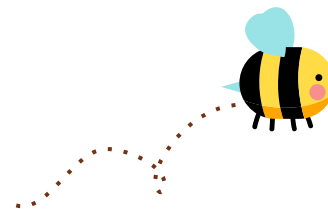
Participants:  
4 males, 1 female



Task	Median	Time (s)
1- Create an account.	5	4.30
2- View the task list of apiary 1.	5	18.20
3- Check the date of the last harvest of hive 1, from apiary 1.	5	21.45
4- Add new beehive.	5	9.10
5- Add new apiary.	5	14.50
6- Find help/documentation.	5	30.40
7- Add task in apiary 1.	5	10.10
8- Find the beehive in apiary 3 where the most recent harvest was done.	4	50.12
9- Find the apiaries with more hives, select the first apiary, find the hive with less handles and find that number.	5	40.30

# LFP User Evaluation

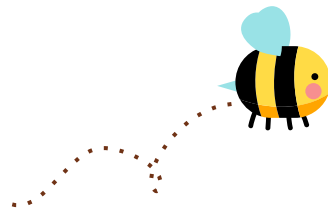
## Bee in Control



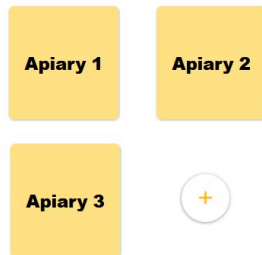
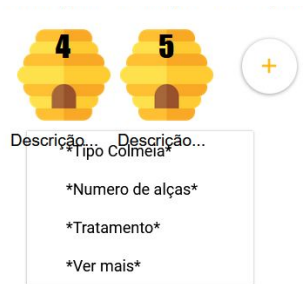
Task	User 1	User 2	User 3	User 4	User 5
1- Create an account.	5	5	5	5	5
2- View the task list of apiary 1.	5	5	5	5	5
3- Check the date of the last harvest of hive 1, from apiary 1.	3	4	5	5	4
4- Add new beehive.	5	5	5	5	5
5- Add new apiary.	5	5	5	5	5
6- Find help/documentation.	5	5	5	5	5
7- Add task in apiary 1.	5	5	5	5	4
8- Find the beehive in apiary 3 where the most recent harvest was done.	2	4	4	4	5
9- Find the apiaries with more hives, select the first apiary, find the hive with less handles and find that number.	5	5	3	5	5

# LFP User Evaluation

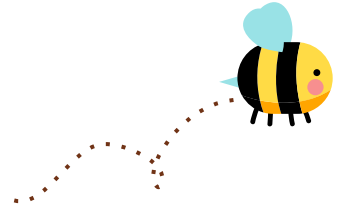
## Bee in Control



Problems	Solutions
The onclick information preview about the beehives	Add some static information
The colors, white on yellow	Black on yellow
The sort button more visible, button only with an icon	Button with icon and label



# Platform used for the functional prototype



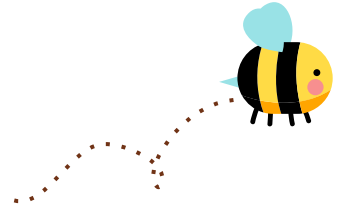
## Bee in Control

- Android Studio
- AnyChart-Android for Reports



AnyChart

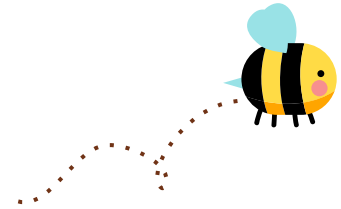
# User Evaluation of the functional prototype



## Bee in Control

- 1- Create an account.
- 2- View the task list of apiary 1.
- 3- Check the date of the last harvest of beehive 1, from apiary 1.
- 4- Add a new beehive.
- 5- Add a new apiary.
- 6- Find the help/documentation.
- 7- Add a task in apiary 1.

# User Evaluation of the functional prototype



## Bee in Control

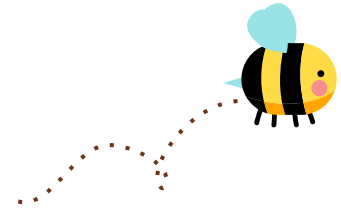
Participants:  
4 males, 1 females

Task	Median	Time(s)
1- Create an account.	5	4.13
2- View the task list of apiary 1.	5	17.80
3- Check the date of the last harvest of hive 1, from apiary 1.	5	20.73
4- Add new beehive.	5	9.04
5- Add new apiary.	5	15.01
6- Find help/documentation.	4	26.78
7- Add task in apiary 1.	5	8.00



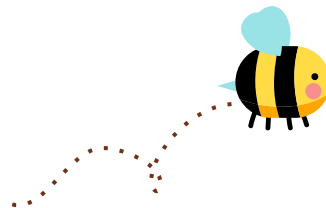
# User Evaluation of the functional prototype

## Bee in Control



Task	Person 1	Person 2	Person 3	Person 4	Person 5
1- Create an account.	5	5	5	5	5
2- View the task list of apiary 1.	5	5	5	5	5
3- Check the date of the last harvest of hive 1, from apiary 1.	5	5	5	5	5
4- Add new beehive.	5	5	5	5	5
5- Add new apiary.	5	5	5	5	5
6- Find help/documentation.	5	3	4	4	3
7- Add task in apiary 1.	5	5	5	5	5

# User Evaluation of the functional prototype



## Bee in Control

### Problems

Find help

See tasks button not relevant enough

Report button too hidden

Put the three dots on every page

### Solutions

Make the symbol more noticeable

Make the button more relevant and by adding better contrast

We added the button to the beehives page

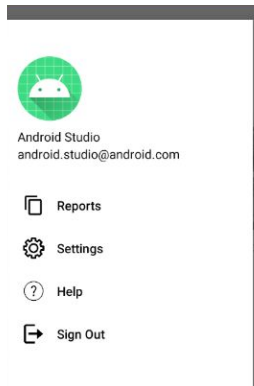
We add this



Bee In Control

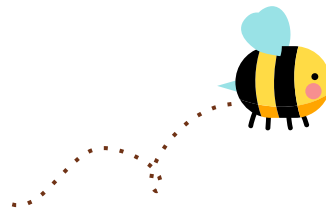
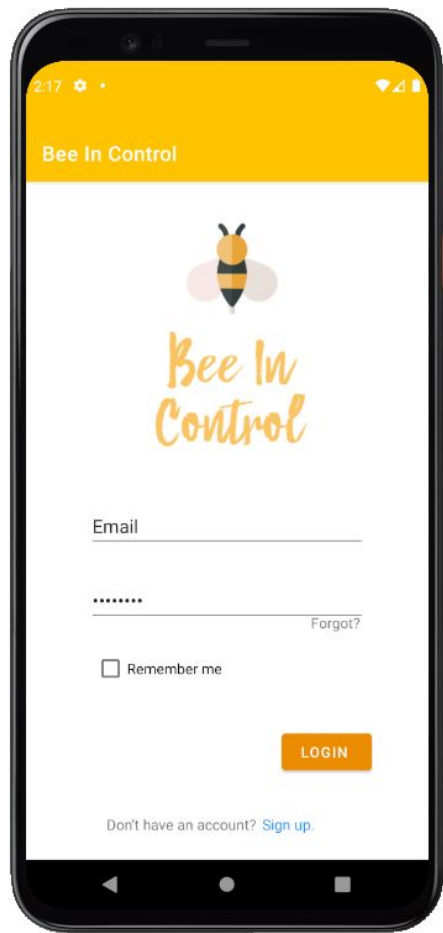


Settings  
Help  
Sign Out



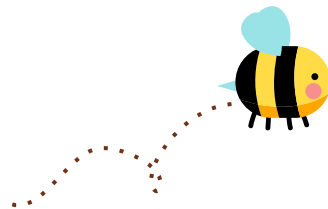
# Demo

## Bee in Control



# Future work

## Bee in Control



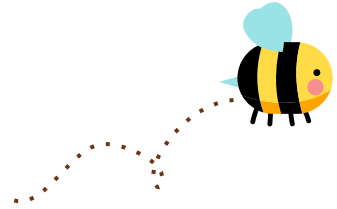
- Integrate the database with this interface that was developed in the Databases project.

## Effort of each group member

- 33% for each.

# Acknowledgments

## Bee in Control



- People who helped us with the usability tests;
- Availability of the teachers to answer our questions.

## Bibliography

- [Android studio documentation](#)
- [AnyChart Library](#)